

Work Order ID 126214

126214

Page 1

November-03-14 2:58:24 PM

Item ID: 41228-301-063-002

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fuel Return Cavity, RH

Start Date: 11/03/14 Start Qty: 3.00

3

Cust Item ID:

Required Date: 11/21/14 Req'd Qty: 3.00

3

Customer:

Reference:

Approvals:

Process Plan:

Date: 11/11/04

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

41228-301-063

D

110

0.00

110

Purchasing

Purchasing

Memo

ISSUE P/O: 26381
SUPPLIER: MSA Aircraft Products Inc.

MANUFACTURE AS PER DWG AND SPEC

MATERIAL CERTS IS REQUIRED

120

Receive & Inspect for Damage & Mat'l Certs

0.00

120

Packaging

Packaging

Memo

0.00

CX 11/11/03 3

3X SP 15-05-14

Page 2

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☒ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☒</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☒	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☒	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design	15-06-04	140	①	Dimension out of tolerance • 1.733 is 1.800 • 1.125 is 1.160 • .875 is .915 • 2.93 is 3.180	DAS 12 989 15/6/9	Acceptable see att. email Acceptable for testing	DAS 12 989 15/6/9		
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
☒ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge		
☐ Pressure/Forced Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other		

Work Order ID 126214***126214***

Page 3

November-03-14 2:58:24 PM

Item ID: 41228-301-063-002

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Fuel Return Cavity, RH

Start Date: 11/03/14 Start Qty: 3.00

3

Cust Item ID:

Required Date: 11/21/14 Req'd Qty: 3.00

3

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start

NR1

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop

NR2Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

190

Identify as per dwg & Stock Location: _____

0.00

190

Packaging

Memo

0.00

Packaging

200

QC21- Final Inspection - Work Order Release

0.00

200

QC

Memo

0.00

Quality Control

Closed 25 incomplete
write off
w 12/05/24

Picklist Print

November-03-14 2:58:23 PM

Page 1

Work Order ID: 126214

126214

Parent Item: 41228-301-063-002

41228-301-063-002

Parent Item Name: Fuel Return Cavity, RH

Start Date: 11/03/14

Required Date: 11/21/14

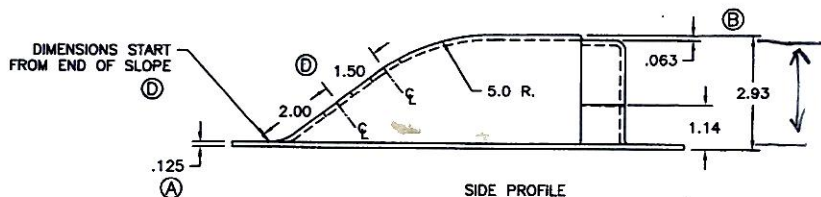
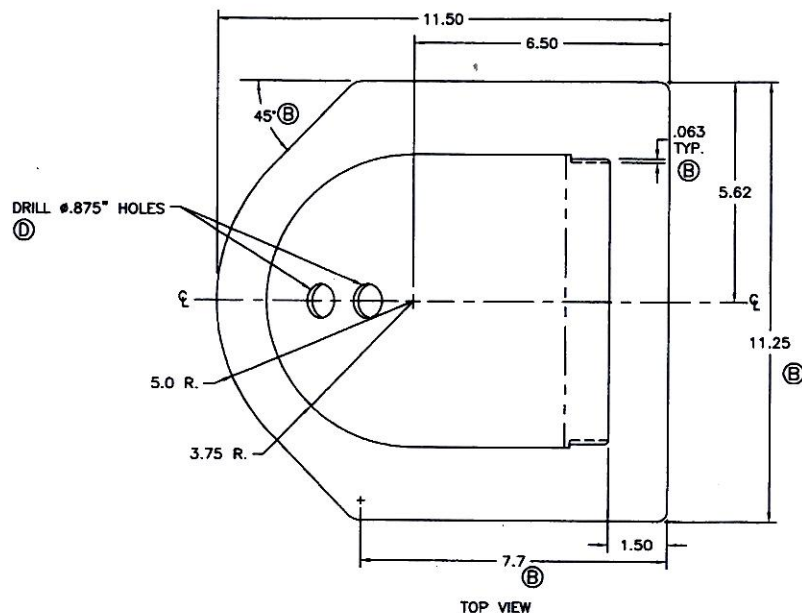
Start Qty: 3.00

Required Qty: 3.00

Comments: IPP REV:A 14.11.03 NEW ISSUE DD VERF:JLM

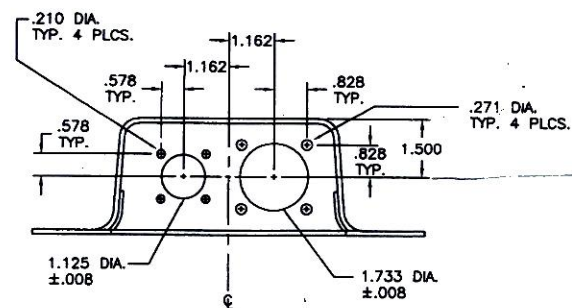
Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
41228-301-063-002P		Purchased			No		Each	0.0000		3			
41228-301-063-002P										**			
Fuel Return Cavity, RH													

3x 8015-05-14



REVISION					
LETTER	DFTSMAN	DATE	DESCRIPTION	APPROVED	DATE
A	TAH	3/2/95	CHANGE FLANGE THICKNESS		
B	TAH	3/6/95	GENERAL UPDATE		
C	DNN	12/14/95	INCORPORATED E.O. C-1.	P. SCHWITZ 96.014 96.015 96.016	3/21/96 3/21/96 3/21/96
D	DNN	6/14/05	INCORP. E.O. D-1 & D-2; CHANGED -001 TO OPPOSITE & -002 TO SHOWN; ADDED .875" HOLES TO THE -001 COMPOSITE ONLY. MINOR CHANGE - FAR 21.95		

C21411104
W10.126214



41228-301-063-001 CAVITY (OPPOSITE) (D)
41228-301-063-002 CAVITY (SHOWN) (D)

- △ OBTAIN CONTOURS AND HOLE PATTERN LOCATIONS FROM MASTER PATTERN 41228-301-063-001 USING MOLD P/N 41202-301-063-001.
- △ OBTAIN CONTOURS AND HOLE PATTERN LOCATIONS FROM MASTER PATTERN 41228-301-063-002 USING MOLD P/N 41202-301-063-002.
- △ FABRICATE IN ACCORDANCE WITH FLIGHT COMPOSITES INC. PROCESS SPECIFICATION NO. 609-3.

NOTES: (C)

41228-301-063-002 CAVITY		41228-301-063-001 CAVITY	
PART NO.		NAME	
NO. REQ'D PER ASSY.		STOCK SIZE	
MATERIAL		MATL.SPEC.	
ZONE		LIST OF MATERIAL	
UNLESS OTHERWISE SPECIFIED		DFTSMAN T. HARVILLE 2/15/95	
CHECK		TITLE FUEL RETURN CAVITY	
STRESS		DWG. SIZE C	
PROL. ENDR.		SCALE 1"=2"	
HEAT TREAT		DWG. NO. 41228-301-063	
FRESH		REV. D	
41228-301-065		Era Helicopters LLC	
NEXT ASSEMBLY			



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO26381

Purchase Order Date 11/4/2014

PO Print Date 11/4/2014

Page Number 1 of 2

Order From :
MSA AIRCRAFT PRODUCTS INC.
10000 LOTA DR
SAN ANTONIO, TX 78217

VU-MSA01

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name

Vendor Phone

Ship To Contact

Ship To Phone

Ship Via:

Ship Acct:

Buyer

Customer POID

Customer Tax #

Terms

Currency

FOB

Chantal Lavoie

10127-2607

COD

USD

Destination-Collect

Line Nbr	Reference Vendor Part Number Line Comments Delivery Comments	Description/ Mfg ID	Req Date/ Taxable Promise Date	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
1	71550-20 PROOF PART	TOOL AND WET LAYUP PART	11/18/2014 Yes 11/18/2014		1.00 ✓ Each	\$2,700.00	\$2,700.00
SP15-01-16							
Line Total:							\$2,700.00
2	41228-301-063-001P AS PER DWG 41228-301-063-001 REV. D B126212	Fuel Return Cavity, LH	12/12/2014 Yes 12/12/2014	FN	3.00 Each	\$375.00	\$1,125.00
Line Total:							\$1,125.00
3	41228-301-063-002P AS PER DWG 41228-301-063-002 REV. D B126214	Fuel Return Cavity, RH	12/12/2014 Yes 12/12/2014	FN	3.00 ✓ Each	\$375.00	\$1,125.00
SP15-05-14							

Note:

11/4/2014

SHIPPER/PACKING LIST

44478

(Page 1 of 1)

SHIPPER



10000 Iota Dr.
San Antonio, TX. 78217
Phone: (210) 590-6100
Fax: (210) 590-6884

DART AEROSPACE LTD

1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

WAYBILL 773583104080

Job #: RA#: Orig Job:

AIRCRAFT #:

P.O. #: PO26381

SHIP DATE: 5/12/2015

PACKED BY:

SHIPPED VIA: Fed X Pri

Attn: LINDA LACELLE

Phone: 613 632-9577

☒ PREPAID ☐ MSA ☒ RECIPIENT
☐ 3rd PARTY
☐ COLLECT ☐ BILL FREIGHT

JOB:

☒ COMPLETE☐ PARTIAL

ITEM NO.	QUANTITY	SHIP	UOM	STOCK CODE	PART NUMBER / DESCRIPTION / SERIAL NUMBERS
1	1	0		26629	41228-301-063-001 s/n 107851 FUEL RETURN CAVITY: PROOF PART (THIS LINE ITEM SHIPPED ON PACKING LIST 43978 January 15, 2015)
2	1	1			MSA Label: Product s/c: 26629 Model No. 41228-301-063-001 s/n: 107851 wo: 12369 (Label in MSA envelope: place this label on "line 1, proof part at your facility)
3	3	(3)		26629	41228-301-063-001 FUEL RETURN CAVITY S/N: 106990, 106991, 106992
4	3	(3)		26630	41228-301-063-002 FUEL RETURN CAVITY S/ N: 106993, 106994, 106995
5	1	1			Conformance Statement Manilla Envelope

SP15-05-14

SP15-05-14

PLATING INSTRUCTIONS

Parts To Be Plated:

Charge To:

P.O. #:

Return By:

Special Note:

CERTIFICATE OF CONFORMITY

IT IS HEREBY CERTIFIED THAT THE ITEMS DESCRIBED ON PURCHASE ORDER PO26381 FOR DART AEROSPACE LTD HAVE BEEN INSPECTED AND FOUND TO COMPLY WITH MSA DESIGN DATA AND SPECIFICATIONS MAINTAINED ON FILE AT THIS FACILITY.

MANAGER QUALITY ASSURANCE

RECEIVED BY:

Aircraft Products, INC.
10000 Iota Dr. Sa. TX 78217

The enclosed information describes materials used in the manufacture of aircraft parts for your

Work Order No: 12369

Released To: **MSA Aircraft**
10000 Iota
San Antonio, TX 78816

A/C:

[illegible]

"This is to certify that all material and work was supplied against the Purchase Order and processed accordance with all applicable requirements, specifications and/or drawings referred to in your order". Mark Boyle QA/QC Inspector April 1, 2015
Authorized Signature Title Date

CERTIFICATE OF CONFORMANCE

The enclosed information describes materials used in the manufacture of all the below listed aircraft parts for **MSA Aircraft Products, INC.**

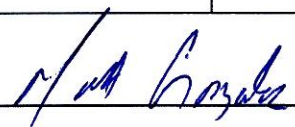
Final Certifications, if required, will be provided when each purchase order is 100% complete. These Documents show compliance with applicable drawings, specifications and other approved acceptance criterion.

Traceability of all materials used in the manufacture of the parts are on file at MSA Aircraft Products INC.

Materials Premanufactured and/or Components

Material, Part	Batch No.	QA Control	Date of Mfg
AX-3110-OST-7781-50	386	14-55650	7/9/13

Parts Manufactured From this Material for:	Part No.	Serial No.	P.O. No. J.N.	Shipper No
MSA Aircraft 10000 Iota San Antonio, TX 78217	41228-301-063-001	106990-91-92; 107851	12369	
	41228-301-063-002	106993-94-95	12369	
	MSA-038-220-1200B	106996-97-98-99	12369	


QA/QC Inspector

April 1 2015

Product Data and parameters have been obtained using the materials listed under carefully controlled conditions. This information, therefore, is believed to be accurate and correctly stated. The enclosed data is indicative of representative properties obtained. The finished parts are the combined results of all the materials listed MSA AIRCRAFT PRODUCT INC.. cannot accept responsibility for the misapplication of the product nor their use under uncontrolled conditions.

CERTIFICATE OF CONFORMANCE

CUSTOMER:	MSA AIRCRAFT PRODUCTS, INC.		
Purchase Order Number:	55650	Certification Date:	12/1/2014
Sales Order Number:	11057	Warranty Expiration Date:	6/1/2015
Product:	AX-3110-OST-7781-50" RC42	Date of Manufacture:	11/24/2014
Description:	Woven Fiberglass Prepreg.	Storage Temperature:	40°F or below
Description (ctd):	Modified Epoxy, FR, RC 42%	Sales Order Quantity:	1,320 yd
Batch Number:	386	Production Quantity:	1,360 yd

Test Report

Specifications: MIL-R-9300B, FAR 25.853 & Axiom Test Standard

Test, Roll # 1	Requirement	Result	Test Method
Weight/psf	0.103 ± 0.006	0.107	ATS-001
Gel Time/second	Report	366	ATS-003
Volatiles/%	Report	0.212	Sec. 4.6.6
Flow/%	Report	24.146	Sec. 4.6.8
Resin Content/%	42 ± 3	43.925	Sec. 4.6.7
60 second vertical burn *			
Extinguishing Time/second	15 maximum	0	FAR 25.853 Appendix F, Part I (a)(1)(i)
Burn Length/inch	6 maximum	3.444	
Drip/Debris Extinguish/second	3 maximum	0	
Test, Roll # 11	Requirement	Result	Test Method
Gel Time/second	Report	366	ATS-003
Resin Content/%	42 ± 3	41.747	Sec. 4.6.7
Production Standard	Requirement	Result	Test Method
Visual Inspection	Pass	Pass	ATS-013
Tack Level / Number	Medium / 3	Medium / 3	ATS-015
Nominal Core Diameter	3"	3"	ATS-013
Sides Coated	One	One	ATS-013
Color	Natural	Natural	ATS-013
Liner Configuration	One Side 1.3 mil Red Poly	One Side 1.3 mil Red Poly	ATS-013

This document certifies material supplied to this order to the following requirements:

Purchase order terms and conditions
Axiom Test Standards (where applicable)
All terms and conditions of the Purchase Order Agreement
Specifications as noted below

Specification(s):

Meets the performance requirements of:

Axiom Test Standard
FAR 25.853 Appendix F, Part I (a)(1)(i)
AMS-C-9084, Class 2 Type VIII B
MIL-R-9300B, Type 1

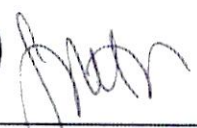
* 3 ply laminate cured 250°F 60 mins 40 psi

CERTIFICATE OF CONFORMANCE

CUSTOMER:	MSA AIRCRAFT PRODUCTS, INC.		
Purchase Order Number:	55650	Certification Date:	12/1/2014
Sales Order Number:	11057	Warranty Expiration Date:	6/1/2015
Product:	AX-3110-OST-7781-50" RC42	Date of Manufacture:	11/24/2014
Description:	Woven Fiberglass Prepreg.	Storage Temperature:	40°F or below
Description (ctd):	Modified Epoxy, FR, RC 42%	Sales Order Quantity:	1,320 yd
Batch Number:	386	Production Quantity:	1,360 yd

Test Report





Signature of Authorized Agent

Patrick Duval

From: Harvey Siemens
Sent: Thursday, June 04, 2015 4:24 PM
To: Patrick Duval
Subject: RE: fuel return cavity

No problem, sorry to be a pain in the butt

HS

From: Patrick Duval
Sent: June-04-15 2:24 PM
To: Harvey Siemens
Subject: RE: fuel return cavity

Good, thanks for your time

From: Harvey Siemens
Sent: Thursday, June 04, 2015 4:21 PM
To: Roberto Fuentes; Patrick Duval; Kevin Cadieux
Subject: FW: fuel return cavity

Pat,

I guess my concerns are unfounded. Good to go then

HS

From: Patrick Duval
Sent: June-04-15 2:12 PM
To: Harvey Siemens
Cc: Kevin Cadieux
Subject: RE: fuel return cavity

Me and Kevin test fitted D5239-1 on the cavity and it actually fits good.
I've attached picture, let me know what you think

From: Harvey Siemens
Sent: Thursday, June 04, 2015 3:35 PM
To: Patrick Duval
Cc: Kevin Cadieux
Subject: RE: fuel return cavity

Pat, Kevin,

I'm pretty sure that that 3.1 dim matches with a part that goes over top of the end of that part you are referring to. I'm concerned that it won't fit properly if we let it go that big?

The hole dims are not a huge concern to me.

HS

From: Patrick Duval
Sent: June-04-15 12:50 PM
To: Harvey Siemens
Subject: RE: fuel return cavity

I was speaking with Kevin, and he says that it doesn't interfere with anything. I've just needed your approval on it. I'll be attaching this email to the work order conforming these deviation.

From: Harvey Siemens
Sent: Thursday, June 04, 2015 2:13 PM
To: Patrick Duval
Subject: RE: fuel return cavity

Pat,

Does this part (with its deviations) fit with the next part in the system? That would be my biggest concern.

HS

From: Patrick Duval
Sent: June-04-15 11:41 AM
To: Harvey Siemens
Cc: Chris Provencal; Patrick Smith; Kevin Cadieux
Subject: fuel return cavity

Hi Harvey,

I wanted to know if you allow some deviations on some dimension of 41228-301-063-002.

- 1.733 is 1.800
- 1.125 is 1.160
- .875 is .915
- 2.93 is 3.180

I've attach the drawing to help you clear out the dimension. Please let me know as soon as possible on what action we need to do.

Thank you.

Pat Duval
QC Coordinator
T: 1-613-632-5200 ext 288
F: 1-613-632-5246
www.dartaero.com
pduval@dartaero.com



